Exhibit 300: Capital Asset Summary

Part I: Summary Information And Justification (All Capital Assets)

Section A: Overview & Summary Information

Date Investment First Submitted: 2009-06-30
Date of Last Change to Activities: 2012-08-17
Investment Auto Submission Date: 2012-02-29
Date of Last Investment Detail Update: 2012-06-29
Date of Last Exhibit 300A Update: 2012-06-29
Date of Last Revision: 2012-08-17

Agency: 006 - Department of Commerce **Bureau:** 48 - National Oceanic and Atmospheric Administration

Investment Part Code: 01

Investment Category: 00 - Agency Investments

1. Name of this Investment: NOAA/NWS/ NCEP Weather and Climate Operational Supercomputer Systems (WCOSS Primary and Backup)

2. Unique Investment Identifier (UII): 006-000310400

Section B: Investment Detail

1. **Provide a brief summary of the investment, including a brief description of the related benefit to the mission delivery and management support areas, and the primary beneficiary(ies) of the investment. Include an explanation of any dependencies between this investment and other investments.**

NOAA Weather and Climate Operational Supercomputer System (WCOSS) serves the NOAA mission by providing reliable High Performance Computing (HPC) capabilities essential to the processing of sophisticated numerical models, data assimilation and analysis, and 7x24x365 product generation. These products are used to predict and understand atmospheric and oceanic phenomena for weather and climate aimed at assessing and forecasting environmental changes, providing decision makers with reliable and timely scientific information. The IT investment includes: - Two operational HPC systems and facilities - HPC and facilities related services - Balanced HPC lifecycle technology expansions/refreshes and growth options WCOSS benefits the mission delivery and management support areas by delivering reliable, timely and accurate science-based environmental predictions for the nation and global community for the protection of life and property and the enhancement of the national economy. The beneficiaries of this investment include NOAA offices, DoD, FEMA, DHS, FAA, other Government agencies, private companies, academia, and international organizations. Dependences between WCOSS and other NOAA investments include: - National Weather Service Telecommunication Gateway (NWSTG) System: WCOSS receives observational data from NWSTG and transmits model products to NWSTG for dissemination. - NOAA OCIO R&D

HPC System (R&D HPCS): WCOSS and R&D HPCS dependencies are core to the research-to-operations and operations-to-research cycles. - NWS NCEP Weather and Climate Infrastructure Services (WCCIS): WCISS provides IT infrastructure for WCOSS including 7x24x365 monitoring to analyze, troubleshoot and resolve problems. - NWS NCEP Data Assimilation and Modeling (DAM): DAM provides scientific resources to make operational improvements and maintain the models which execute on WCOSS. - Advanced Weather Interactive Processing System (AWIPS): WCOSS provides model products to NWS forecasters who use AWIPS to create and deliver forecast products. The current WCOSS contract expires 9/30/2011. NOAA is conducting a 2-year bridge sole source acquisition to ensure no gap in service with the current WCOSS and will award the Bridge contract FY11Q4. NOAA is conducting a full and open competition using formal source selection procedures to provide the replacement systems for the current operational supercomputers. NOAA will award the full and open contract FY12Q1.

2. **How does this investment close in part or in whole any identified performance gap in support of the mission delivery and management support areas? Include an assessment of the program impact if this investment isn't fully funded.**

WCOSS provides the operational supercomputers to execute NOAA's operational environmental numerical prediction models and impacts a number of NOAA programs which rely on operational supercomputing to meet their performance goals to include: - Hurricane, Tropical Cyclone, and Tropical Forecasts: improve the accuracy of hurricane tracks. - Understand and predict climate: improve climate variability predictive capability (seasonal prediction) with an increased range of applicability for management and policy decisions - Severe Weather Forecasting: Improve severe weather warnings by providing longer lead times and reducing over warning through interdisciplinary modeling, and ability to expand scope of predictions - Space Weather Prediction: Improve space weather models to predict geomagnetic disturbances, to increase lead time of operational warnings of large geomagnetic storms - Real-time Weather Information for Navigation: Support decision support tools for trajectory-based enroute operations and terminal airport super-density operations, both of which require rapidly updated, consistent weather information in digital form - Ecological Forecasting: Develop variety of types of ecological models, including integrated models that directly influence physical modeling and processes in the ocean, coastal zones, and river systems, such as sediment transport and chlorophyll (particle) models - Ensemble Processing Model Uncertainty Improvements: Improve multi-model ensembles across all service areas (climate through severe weather) WCOSS includes a number of contractual performance metrics to ensure a reliable supercomputing platform to execute NOAA's operational models and these metrics include: - 99.9% Operational Use Time with new full and open WCOSS contract (currently 99%) - 99% Development Use Time - On-time product generation within 15 minutes of target completion times at a rate of 99% or better If WCOSS is not fully funded, WCOSS will not deliver reliable, timely and accurate science-based environmental predictions for the nation and global community for the protection of life and property and the enhancement of the national economy. WCOSS will not provide the operational supercomputer platform to support hurricane, tropical cyclone, and tropical forecasts; climate forecasts; severe weather forecasts; space weather forecasts; and weather forecasts for navigation to include aviation and marine.

3. **Provide a list of this investment's accomplishments in the prior year (PY), including**

projects or useful components/project segments completed, new functionality added, or operational efficiency achieved.

WCOSS provided the operational supercomputing platform for the execution of a number of model and ingest accomplishmens in the PY to include: Global Forecast System (GFS) resolution increase from T382 to T574 0-192 hrs (~35 km to ~27 km) / T190: 204-384 hrs, upgrade to shallow/deep convection Rapid Update Cycle (RUC) 3DVAR analysis 13 km horizontal, extending forecasts to 18hrs Climate Forecast System (CFS), reanalysis of the atmosphere, ocean, land and sea ice using a coupled background guess forecast Global Real Time Ocean Forecast System upgrade to 1/12 degree National Unified Operational Prediction Capability (NUOPC) IOC-1: NCEP distributes Canadian, NCEP and Navy ensembles via NOMADS Gridpoint Statistical Interpolation (GSI) upgrade Sea Surface Temperature (SST), new SST 0.25 degree resolution Radar Level II Conversion, 4bit to 8 bit and handle DualPol New lightning data transition to operations NASA Langley cloud data decoder JASON-2 assimilated into RTOF.

4. **Provide a list of planned accomplishments for current year (CY) and budget year (BY).**

For the CY, WCOSS planned accomplishments include: - Start WCOSS Bridge period of performance (WCOSS Bridge is a two year contract inclusive of all options) to ensure no gap in service by maintaining the current operational supercomputing systems located at the vendor's facility in Gaithersburg, MD and Government provided facility in the NASA IV&V facility in Fairmont, WV. This contract is to bridge the period of time between the end of the current WCOSS contract and the stand up of the new system under a new WCOSS competitively awarded IDIQ contract. - Finalize source selection procedures and competitively award the new WCOSS IDIQ for the replacement of the current WCOSS. NCEP requires a transition period of up to two years to fully migrate, test and verify operational environmental models to produce reliable, timely and accurate science-based environmental predictions for the nation and global community for the protection of life and property and the enhancement of the national economy. - Award WCOSS IDIQ task order to commence execution for vendor fit-up of facilities and deliver two operational high performance computing systems. - If the $10M transition funding is approved, execute task order to exercise WCOSS growth option to increase WCOSS computing capacity including storage For the BY, WCOSS planned accomplishments include: - Port, test and verify operational models and other applications from the current to new systems delivered by the new WCOSS IDIQ task order. - Insert new WCOSS vendor provided facilities into the Wide Area Network (WAN). - Achieve IT Security Authority to Operate for new operational supercomputing systems. - Go live with new systems by FY13Q4 and close out Bridge contract. - If the $10M transition funding is approved, execute task order to exercise WCOSS growth option to increase WCOSS computing capacity including storage.

5. **Provide the date of the Charter establishing the required Integrated Program Team (IPT) for this investment. An IPT must always include, but is not limited to: a qualified fully-dedicated IT program manager, a contract specialist, an information technology specialist, a security specialist and a business process owner before OMB will approve this program investment budget. IT Program Manager, Business Process Owner and Contract Specialist must be Government Employees.**

2010-06-02

Section C: Summary of Funding (Budget Authority for Capital Assets)

1.

Table I.C.1 Summary of Funding

	PY-1 & Prior	PY 2011	CY 2012	BY 2013
Planning Costs:	$0.0	$0.0	$0.0	$0.0
DME (Excluding Planning) Costs:	$0.0	$0.0	$0.0	$0.0
DME (Including Planning) Govt. FTEs:	$0.0	$0.0	$0.0	$0.0
Sub-Total DME (Including Govt. FTE):	0	0	0	0
O & M Costs:	$234.9	$28.9	$41.7	$38.2
O & M Govt. FTEs:	$2.1	$2.1	$2.1	$2.1
Sub-Total O & M Costs (Including Govt. FTE):	$237.0	$31.0	$43.8	$40.3
Total Cost (Including Govt. FTE):	$237.0	$31.0	$43.8	$40.3
Total Govt. FTE costs:	$2.1	$2.1	$2.1	$2.1
# of FTE rep by costs:	12	13	13	13
Total change from prior year final President's Budget ($)		$4.8	$7.6	
Total change from prior year final President's Budget (%)		18.30%	21.00%	

2. If the funding levels have changed from the FY 2012 President's Budget request for PY or CY, briefly explain those changes:

In FY12/FY13, NOAA will transition operations to a new contract. The 1st transition year enables the vendor to prepare facilities and achieve acceptance of new HPC systems. In the 2nd transition year, NOAA ports/validates operational models onto the new systems. During the 2-year period, the operational models on the current supercomputers will be maintained under a bridge contract. The requested FY12/FY13 $10M increase will fund the bridge contract. FY12 also includes $1.07M from NAQFC.

Section D: Acquisition/Contract Strategy (All Capital Assets)

Table I.D.1 Contracts and Acquisition Strategy

Contract Type	EVM Required	Contracting Agency ID	Procurement Instrument Identifier (PIID)	Indefinite Delivery Vehicle (IDV) Reference ID	IDV Agency ID	Solicitation ID	Ultimate Contract Value ($M)	Type	PBSA ?	Effective Date	Actual or Expected End Date
Awarded	1330	DOCDG133012CQ0004									
Awarded	1330	DOCDG133011CN0083									

2. If earned value is not required or will not be a contract requirement for any of the contracts or task orders above, explain why:
These contracts are operating leases within this steady state investment. As such, EVM is not required for the contract.

Exhibit 300B: Performance Measurement Report

Section A: General Information

Date of Last Change to Activities: 2012-08-17

Section B: Project Execution Data

Table II.B.1 Projects

Project ID	Project Name	Project Description	Project Start Date	Project Completion Date	Project Lifecycle Cost ($M)
3104M10001	WCOSS Task Orders (five year base period)	Through the execution of task orders during the 5-year base period, the WCOSS IDIQ contract provides the primary and backup operational supercomputers, vendor provided facilities for the primary and backup supercomputers, and related High Performance Computing (HPC) services in support of WCOSS, and growth options for additional computing capabilities, facilities, and/or HPC services.			
3104M12001	WCOSS Bridge Contract FY11/FY13	The Bridge Contract provides the two-year bridge to ensure continuity with the current WCOSS and overlaps the first two years of the new WCOSS acquisition (FY12 and FY13). The Bridge contract includes one FY12 1-year base period and multiple FY13 option periods.			
3104M12002	Government furnished facilities for Bridge Contract FY12/FY13	FY12/FY13 O&M for the Bridge Government furnished facilities for the Bridge contract -- NASA IV&V in Fairmont, WV.			

Table II.B.1 Projects

Project ID	Project Name	Project Description	Project Start Date	Project Completion Date	Project Lifecycle Cost ($M)
3104M12003	WCOSS Network FY12/FY13	WCOSS WAN support for bridge and new 10-year WCOSS contracts. Provides fit-up to new WCOSS facilities with the execution of Task Order 001 plus WAN O&M forBridge systems.			
3104M12004	WCOSS Dissemination Services FY12/FY13	FY12/FY13 O&M for WCOSS dissemination Services to incude the NOAA OCIO WOC.			
3104M12005	WCOSS Transition and Restore Operational Capabilities (five year base period)	Execute WCOSS ID/IQ Task Orders to restore operational capability through growth options with approved funding.			
3104M12006	NCEP R&DHPCS	Transfer funds to NOAA OCIO R&DHPCS program for NCEP usage of R&DHPC services.			
3104M13007	WCOSS IT Security	WCOSS IT Security including FY13 A&A ATO for new systems delivered by WCOSS IDIQ Task Orders.			

Activity Summary

Roll-up of Information Provided in Lowest Level Child Activities

Project ID	Name	Total Cost of Project Activities ($M)	End Point Schedule Variance (in days)	End Point Schedule Variance (%)	Cost Variance ($M)	Cost Variance (%)	Total Planned Cost ($M)	Count of Activities
3104M10001	WCOSS Task Orders (five year base period)							
3104M12001	WCOSS Bridge Contract FY11/FY13							
3104M12002	Government furnished facilities for Bridge Contract FY12/FY13							
3104M12003	WCOSS Network FY12/FY13							

Activity Summary

Roll-up of Information Provided in Lowest Level Child Activities

Project ID	Name	Total Cost of Project Activities ($M)	End Point Schedule Variance (in days)	End Point Schedule Variance (%)	Cost Variance ($M)	Cost Variance (%)	Total Planned Cost ($M)	Count of Activities
3104M12004	WCOSS Dissemination Services FY12/FY13							
3104M12005	WCOSS Transition and Restore Operational Capabilities (five year base period)							
3104M12006	NCEP R&DHPCS							
3104M13007	WCOSS IT Security							

Key Deliverables

Project Name	Activity Name	Description	Planned Completion Date	Projected Completion Date	Actual Completion Date	Duration (in days)	Schedule Variance (in days)	Schedule Variance (%)
3104M12001	Award Bridge.	Award Bridge Contract.	2011-08-31	2011-08-31	2011-08-31	43	0	0.00%
3104M10001	Award WCOSS IDIQ contract.	Award WCOSS IDIQ contract. Using Task Orders, the Contractor will design, develop, deliver, integrate, configure, test, validate, monitor, document, support, enhance, refresh, upgrade, fit-up and sustain the WCOSS total solution defined as the primary and backup supercomputers, related contractor provided facilities, and hardware, software and services.	2011-10-28	2011-11-23	2011-11-23	35	-26	-74.29%
3104M10001	Award Task Order	Task Order 001	2011-11-25	2011-11-25	2011-11-25	38	0	0.00%

Key Deliverables								
Project Name	Activity Name	Description	Planned Completion Date	Projected Completion Date	Actual Completion Date	Duration (in days)	Schedule Variance (in days)	Schedule Variance (%)
	001 for Phase 1 Project Management Plan	acquires project management services for the Contractor's Phase 1 WCOSS capabilities that achieve NOAA's Operational High Performance Computing (HPC) objectives.						
3104M12001	Execute FY12Q1 Bridge Base Period of Performance.	Execute Bridge contract base period FY12Q1.	2011-12-31	2011-12-31	2011-12-31	91	0	0.00%
3104M10001	Award Task Order 002 for new systems for the base period using base funding.	Task Order 002 acquires new primary and backup operational supercomputers, facilities and high performance computing services for the Contractor's Phase 1 and Phase 2 WCOSS capabilities that achieve NOAA's Operational High Performance Computing (HPC) objectives.	2012-02-15	2012-02-15	2012-02-15	134	0	0.00%
3104M12001	Execute FY12Q2 Bridge Base Period of Performance.	Execute Bridge contract base period FY12Q2.	2012-03-31	2012-03-31	2012-03-31	90	0	0.00%
3104M10001	Pre-delivery System Early Access (2 months).	Contractor provides early access to the pre-delivery system with characteristics similar to Phase 1 system within two months or sooner from this Task Order 002 award using the schedule defined in the WCOSS IDIQ	2012-04-13	2012-04-13	2012-04-13	58	0	0.00%

Key Deliverables								
Project Name	Activity Name	Description	Planned Completion Date	Projected Completion Date	Actual Completion Date	Duration (in days)	Schedule Variance (in days)	Schedule Variance (%)
		Task Order 001 Project management plan.						
3104M12001	Execute FY12Q3 Bridge Base Period of Performance.	Execute Bridge contract base period FY12Q3.	2012-06-30	2012-06-30	2012-06-30	90	0	0.00%
3104M12001	Execute FY12Q4 Bridge Base Period of Performance.	Execute Bridge contract base period FY12Q4.	2012-09-30	2012-09-30		91	0	0.00%
3104M12001	Bridge MOD0004 and CLIN1006.	Execute Bridge Option CLIN1006. Cost avoidance to mitigate FY13 elimination of Air Quality funding by descoping FY13 Bridge application support labor hours and restructure of FY13 optional CLINs.	2012-11-06	2012-11-06		97	0	0.00%
3104M10001	Phase 1: System Delivery, Build and Install.	The Contractor delivers the complete Primary and Backup WCOSS for Government access at both Contractor-provided facilities using the schedule defined in the WCOSS ID/IQ Task Order 001 Project Management Plan.	2012-11-23	2012-11-23		112	0	0.00%

Section C: Operational Data

Table II.C.1 Performance Metrics

Metric Description	Unit of Measure	FEA Performance Measurement Category Mapping	Measurement Condition	Baseline	Target for PY	Actual for PY	Target for CY	Reporting Frequency
Sustain NCEP Production Suite (NPS) on-time product generation within 15 minutes of target completion times at a rate of 99.00% or better.	%	Mission and Business Results - Management of Government Resources	Over target	99.000000	99.000000	99.740000	99.000000	Monthly
Sustain Operational Use Time (OUT) of 99.00% or better. OUT is defined as the percentage of time the NCEP Production Suite (NPS) can run on the WCOSS. OUT is determined by considering all WCOSS resources in which a subset of this total resource is necessary to execute the entire NPS. The NPS executes on either the Primary or Backup WCOSS.	%	Technology - Effectiveness	Over target	99.000000	99.000000	99.800000	99.000000	Monthly
Sustain Development Use Time (DUT) of 99.00% or better. DUT is defined as the percentage of time development jobs can run on the WCOSS. DUT is determined by considering all WCOSS resources minus the resources necessary to execute the entire NCEP	%	Customer Results - Customer Benefit	Over target	99.000000	99.000000	99.480000	99.000000	Monthly

Table II.C.1 Performance Metrics

Metric Description	Unit of Measure	FEA Performance Measurement Category Mapping	Measurement Condition	Baseline	Target for PY	Actual for PY	Target for CY	Reporting Frequency
Production Suite (NPS). The Transition to Operations (T2O) executes within the DUT and the T2O will execute on the Primary and Backup WCOSS.								
Increase capability X-Factor of operational supercomputer. The new WCOSS contracts include built-in requirements to provide contractual high performance computing capability increases with steady state funds. The X-Factor may also be increased by exercising growth options if funding is made available. NOAA modeling plans rely heavily on these built-in capability increases for model improvements during the WCOSS upgrade life-cycle.	TeraFLOP	Technology - Technology Costs	Over target	69.735000	69.735000	69.735000	71.130000	Semi-Annual
Sustain System Availability of 99% or better. System Availability is the percentage of time the WCOSS was available to run operational (NPS) and development (T2O) jobs. System	%	Technology - Reliability and Availability	Over target	99.000000	99.000000	99.880000	99.000000	Monthly

Table II.C.1 Performance Metrics

Metric Description	Unit of Measure	FEA Performance Measurement Category Mapping	Measurement Condition	Baseline	Target for PY	Actual for PY	Target for CY	Reporting Frequency
Availability is computed as the ratio of total processor minutes available for running the operational and development suites to the total processor minutes available each month.								